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Tin M. Aye

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EXAMINER

LAVARIAS, ARNEL C

ART UNIT

PAPER NUMBER

2872

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/920,071	Applicant(s) AYE ET AL.	
	Examiner Arnel C. Lavarias	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/16/09, 2/20/09, 6/20/03, 2/13/02.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-8, 11-20 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-8, 11-14, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 15-20 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/20/09, 6/20/03, 2/13/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendments to Claims 6, 12, 15-16, 18, 24-25 in the submission filed 4/16/09 are acknowledged and accepted.
2. The cancellation of Claims 9-10, 21-22 in the submission filed 4/16/09 is acknowledged and accepted.
3. The substitute specification filed 4/16/09 has been entered because it conforms to 37 CFR 1.125(b) and (c).
4. In view of the amendments made above, the objections to the specification in Section 1 of the Office Action dated 11/18/02 are respectfully withdrawn.

Response to Arguments

5. The Applicants' arguments with respect to Claims 6-25 have been considered but are moot in view of the new ground(s) of rejection.
6. The Examiner additionally notes that the Official Notice taken in Section 6 of the Office Action dated 11/18/02 has been taken to be admitted prior art since Applicants failed to seasonably traverse the assertion of Official Notice (See MPEP 2144.03).
7. Claims 6-8, 11-14, 24-25 are now rejected as follows.

Priority

8. If applicant desires to claim the benefit of a prior-filed application under 35 U.S.C. 119(e), a specific reference to the prior-filed application in compliance with 37 CFR 1.78(a) must be included in the first sentence(s) of the specification following the title or in an application data sheet. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications.

If the instant application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35

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U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Drawings

9. The replacement drawings were received on 9/17/01. These drawings are objected to for the following reason(s) as set forth below.

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10. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Figure 5- Reference numerals 42.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

11. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “44” has been used to designate both in indexing fluid and a photolithographic mask (See Page 13 of the specification). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin

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as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

12. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Figure 5- Reference numeral 46 (See Page 13 of the specification).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

13. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. *The form and legal*

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phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. *It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.*

14. The abstract of the disclosure is objected to because of the following informalities:

Abstract, line 3- 'The invention is directed to an' should read 'An'

Abstract, lines 4, 8- 'comprises' should read 'includes'.

Correction is required. See MPEP § 608.01(b).

15. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Examples of such errors are set forth below.

16. The disclosure is objected to because of the following informalities:

Page 14, line 11- '46' should read '44'

Page 15, line 7- 'systems' should read 'system's'.

Appropriate correction is required.

Claim Objections

17. Claims 15-20, 23 are objected to because of the following informalities:

Claim 15 recites the limitation "a view region mask" in line 9. This appears problematic, since a view region mask is already recited in line 5, and it is not

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certain whether the view region mask of line 9 is a separate structural feature or is the same view region mask recited in line 5. For purposes of examination, the above limitation has been interpreted to be "the view region mask".

Claim 15 also recites the limitation "the view region mask" in line 10. This also appears problematic, since it is not certain which view region mask is being referred to here (i.e. the view region mask in line 5 or in line 9).

Claims 16-20, 23 are dependent on Claim 15, and hence inherit the deficiencies of Claim 15.

18. Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. All of the recited features of Claim 16 are present in Claim 15, as presently amended.

Claim 16 appears redundant and does not appear to further limit any of the subject matter already recited in Claim 15.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

19. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

20. Claims 6-8, 11-14, 24-25, as best understood, are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description

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requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Each of Claims 6, 12, and 24 recites the limitation "...each (of the first and second) holographic recording(s) is approximately 2.5 inches in width...".

However, after reviewing the specification and drawings of the instant application, it is evident that the first and second holographic recordings of the interlaced waveguide hologram includes a predetermined width that is approximately equal to the width of an standard LCD pixel, i.e. 200 microns (See Page 13, lines 1-3 of the specification). It appears that it is the view region mask that includes blacked out regions that have widths in the range of 2.5 inches (See Page 14, lines 6-10 of the specification). Claims 7-8, 11, 13-14, 25 are dependent on Claims 6, 12, and 24, and hence inherit the deficiencies of Claims 6, 12, and 24.

Claim Rejections - 35 USC § 102

21. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

22. Claims 6-8, 11-12, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Orr et al. (U.S. Patent No. 6157474), of record.

Regarding Claim 6, Orr et al. discloses a stereoscopic optical device (Fig. 4) comprising an interlaced waveguide hologram comprising a first holographic recording 3r and a second holographic recording 3l interlaced with the first holographic recording (lines 13-37, col. 7). The interlaced hologram 3 is used to produce two fields of view, one for the left eye and one of the right eye, the fields of view separated by a distance approximately equal to the distance between two eyes in a viewer e.g., approximately 2.5 inches. Masks 13l and 13r used for recording the corresponding holographic recordings correspond to the viewing apertures 5l and 5r. (see Fig. 2, 5, and lines 13-20, col. 5 and 58-60, col. 8). It is noted that the limitation 'each of the first and second holographic recordings being formed using a photolithographic mask and a view region mask, each of which has a series of light transmissive openings having selected inter-distance between the light transmissive openings' is a product-by-process limitation. As per MPEP 2113:

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Thus, the above product-by-process limitation has not been given significant patentable weight.

Regarding Claims 7-8, 11, the first set of holographic cells 3r corresponds to a right visual field and the second set of holographic cells 3l corresponds to a left visual field (lines 21-46, col. 5). The combined effect is to present a three-dimensional scene to the viewer (lines 1-7, col. 3).

Regarding Claim 12, the device of Orr further comprises a backlight 1, a first waveguide hologram and a liquid crystal display 9, wherein light from the light source is incident onto the first hologram, subsequently is incident onto the interlaced hologram 3 and then is diffracted to the LCD 9 before it is viewed by the left and right eye of the viewer (Figs. 2, 4 and lines 50-51, col. 4, 17-22, col. 8 and 13-22, col. 7).

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

25. Claims 13-14, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Orr et al. in view of Eichenlaub (U.S. Patent No. 5457574), of record.

Regarding Claim 14, Orr discloses all the limitations of the above claim except for teaching that the backlight illuminating the first hologram (the one before the interlaced hologram 3) is collimated. Eichenlaub discloses an autostereoscopic display device wherein an LCD unit is backlit with collimated light emerging from Fresnel lens 102 (Fig. 4 and lines 52-67, col. 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use

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collimated light for illuminating the series of holograms in Orr's device for exploiting the uniformity of the collimated light and thus achieving more efficient reproduction of the holograms recorded in the two HOEs.

Regarding Claim 13, Eichenlaub does not specify that an array comprising micro-Fresnel lenses is used to collimate the back light. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an array of micro-Fresnel lenses as collimating means, since Official Notice is taken that arrays of micro-lenses are used in conjunction with display devices, for better coupling of the light to the arrayed holographic cells.

Allowable Subject Matter

26. Claims 15-20, 23 would be allowable if rewritten or amended to overcome the objections(s) set forth in this Office action.

Conclusion

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 10:00 AM - 6:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Arnel C. Lavarias
Primary Examiner
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7/1/09

/Arnel C. Lavarias/
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